Renewable Energy Resources In Inyo County

This paper has been prepared by the Inyo County Planning Department to present evidence to support additional Competitive Renewable Energy Zones (CREZ) in Inyo County in California's Renewable Energy Transmission Initiative (RETI). Additionally, as suggested at the RETI Stakeholder Steering Committee (SSC) on November 3, 2009, County representatives are requesting that potential renewable energy applicants interested in resource development in the County relay their pursuits to appropriate representatives on the SSC.

Introduction

Inyo County provides superior opportunities for renewable energy development. Wind, solar, and geothermal resources are present throughout the County and may be harnessed to diversity the nation's energy portfolio and reduce greenhouse gas emissions. Existing transmission facilities through the County provide capacity to convey power generated locally and elsewhere to major population centers in California and throughout the west, as well as opportunities for increased transmission capacity with minimal disturbance to the physical or social environment.

The Inyo County Board of Supervisors has identified potential CREZ, which are illustrated in the attached graphic. As indicated, numerous areas of the County provide excellent locations for solar energy development, including in the Owens Valley, Searles Valley, Indian Wells Valley, Amargosa Valley, Fish Lake Valley, and in the vicinity of Charleston View, and the RETI maps should be updated accordingly. Solar energy generation facilities may also be appropriate in electrical transmission rights-of-way. Geothermal resources are located throughout the County, and existing geothermal energy is generated at the Coso Power Plant complex east of Coso Junction. Wind energy development is being investigated in southwest Inyo County as well.

Transmission

Transmission facilities route power through the County as well as distribute electricity generated in the County. Several hydroelectric power generation facilities are located in the Owens Valley, and the Coso Geothermal complex generates power on the China Lake Naval Air Weapons Station. Electricity generated at these facilities is generally routed towards population centers to the south, on transmission lines in the Owens Valley, or lines leading south from the Coso complex through the Naval Station and the Ridgecrest area. Additional transmission provides power to the Searles Valley, southeast Inyo County, as well as along the County's eastern border with Nevada.

Two major transmission lines run through the Owens Valley. The Pacific DC Intertie is a large 5,000 kV multi-terminal overhead transmission line that extends from Oregon to southern California. The other is the City of Los Angeles' Gorge Rinaldi 230 kV line.

The West Wide Energy Corridor Programmatic EIS identifies energy corridors through the Owens Valley and adjacent to the County in Nevada.[1] The RETI and the Nevada's equivalent have identified similar corridors.[2] Additional transmission upgrades into and through the Owens Valley have been discussed for geothermal energy development in western Nevada.[3]

Geothermal

Most of the County provides for geothermal resource energy development.[4] Reportedly, the Coso Geothermal Power Plant complex in southwest Inyo County can produce up to approximately 300 megawatts, and a recent project to inject water into the geothermal field has increased the Plant's capacity to power 50,000 additional homes.[5] The BLM has initiated an EIS for about 22,500 acres of nearby lands for geothermal development in the vicinity of the Haiwee Reservoir.[6] Geothermal exploratory wells in this area have been approved by the State, BLM, and the County.[7]

Solar

Solar energy potential in Inyo County is amongst the highest in the nation.[8] Because the County is in the rainshadow of the Sierra Nevada, on average, there are approximately 300 sunny days per year. The wide flat valleys provide for excellent locations for solar power generation with limited shadows from the mountains.

Data are being collected to better ascertain solar potential in the County. The table on the following page presents preliminary results from this effort. As indicated, solar potential is quite high, slightly more than predicted by national modeling efforts.

With the assistance of the County to facilitate permitting, a one-megawatt system has recently been installed at the Furnace Creek Ranch in Death Valley to reduce greenhouse gas emissions by 30 percent at the facility.[9] Interest has been expressed in solar energy development at the following locations:

- Hay Ranch (about 700 acres near Coso Junction along Highway 395) – Terra-Gen Power LLC.
- McNaughton Property (approximately 1,400 acres east of Independence) – AEI CASC Consulting.

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1 http://corridoreis.anl.gov/index.cfm.
2 RETI Phase IIa Report and http://www.retaac.org/.
3 http://www.vulcanpower.com/html/vulcan.htm.
4 http://www.blm.gov/wo/st/en/prog/energy/geothermal/geothermal_nationwide.html.
5 http://www.terra-genpower.com/Home.aspx. Inyo County CUP 2007-03.
6 Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Leasing of National System of Public Lands for Geothermal Resource Development in the Haiwee Geothermal Leasing Area Located in Inyo County, CA and To Amend the California Desert Conservation Area Plan of 1980. Federal Register, Volume 74, No. 175, Friday, September 11, 2009, pages 46786 and 46787.
7 Final Environmental Assessment/Initial Study Deep Rose Geothermal Exploration Project Inyo County California, December 2005. Inyo County CUP No. 2005-06.
8 http://solareis.anl.gov/documents/maps/sol015.pdf and http://solareis.anl.gov/documents/maps/sol010.pdf. http://www.nrel.gov/gis/solar.html.
9 https://www.furnacecreekresort.com/press-releases-1841_2660.html.

Table
Solar Potential (in Percent) in Southwest Inyo County
(Communities of Keeler and Cartago)

Month	Keeler	Cartago
January	85.6	86.4
February	81.1	74.6
March	86.4	89.2
April	89.2	85.5
May	93.0	91.5
June	94.5	90.9
July	89.1	91.2
August	90.3	91.8
September	91.4	87.6
October	89.2	87.2
November	84.4	81.1
December	80.6	81.3

- Lone Pine Tribe (south of Lone Pine).
- Wiley Trust properties in Charleston View (approximately 7,000 acres).
- Owens Lake (approximately 90 square miles) and Los Angeles Department of Water and Power lands in the Owens Valley[10] (approximately 175,000 acres).

Wind

According to the BLM's Wind Energy Development Programmatic EIS, potential wind energy resources in Inyo County range to superb.[11] The BLM Ridgecrest Field Office is in receipt of applications from the following two companies for meteorological assessments for wind energy development in southern Inyo County.

- Debenham Energy LLC– 16,364 acres on east and west sides of Highway 395 and Haiwee Reservoir in southwestern Inyo County, up to eight towers.[12]
- RES America Developments – environmental documents expected in January for the following two meteorological assessments for wind energy projects along Highway 395 in southwestern Inyo County:[13] (1) Little Lake North – 13,754 acres, six towers; (2) Little Lake South – 4,000 acres, three towers.

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10 Speech by David Freeman, Interim LADWP General Manager at Pat Brown Institute of Public Affairs, November 12, 2009.

11 http://windeis.anl.gov/guide/maps/map2.html.

12 http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/pa/energy/wind.Par.9224.File.dat/Renew_Energy_2_09_wind.pdf.

13 Refer to BLM Ridgecrest Field Office - (760) 384-5400.

Conclusion

As indicated, Inyo County provides excellent existing and potential renewable energy resources. Existing transmission rights-of-way provide for existing and potentially expanded capacity to convey renewable energy from and through the County to major markets to the south. Interest in renewable energy development in Inyo County exists, and these superior resources should be utilized to diversity the nation's energy portfolio and reduce emissions of greenhouse gases. Future planning efforts to achieve local, State, and federal renewable energy goals should continue to take these resources into account.